S104 Exploring science

Introduction and Guide

READ ME FIRST!

Please read this booklet before you start working on any other S104 resources because it provides important information about the module materials, structure and how the various components relate to each other.

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1 Welcome to S104

On behalf of the module team, welcome to S104 *Exploring science*. We hope that you will have as interesting and enjoyable an experience studying this module as we did in preparing it.

This *Introduction and Guide* contains everything you need to know in order to get started. It also contains important information about your study of the module and about the assessment. You will need to refer to this *Introduction and Guide* throughout the module, so keep it to hand while you study.

1.1 Our aims

In S104 we aim to develop your knowledge of key areas of science and promote your enthusiasm for study through a wide range of science-based topics. Throughout the module we will encourage you to identify science in the world around you and in everyday life, and to begin to use your knowledge and understanding to talk about topical issues.

The module will introduce you to fundamental concepts and ideas in astronomy, biology, chemistry, Earth sciences, environmental science and physics. It will demonstrate that knowledge in more than one of these areas is often needed in order to tackle a problem or answer a question.

You will probably find that you enjoy some parts of the module more than others and we hope the scope of S104 will give you the opportunity to think about areas you may wish to pursue in future study. S104 also aims to teach and develop study skills and science skills so that when you have successfully completed the module you will be well equipped to move on in your chosen study pathway. Many of these skills will also be transferable and useful in employment.

2 What to do first

2.1 Getting online

S104 makes extensive use of internet resources and the S104 website (see Section 4.3) contains important information for your studies, so we suggest that your first task is to get online and visit some of the Open University (OU) resources that will help you in your studies.

- Make sure that you have an internet service provider (ISP) and have familiarised yourself with connecting your computer to the internet using a web browser.

- Now have a look at your OU StudentHome page (www.open.ac.uk/students). To access this you will need your OU Computer Username (OUCU) and password (you will find this information in the letter you received when you first registered with the OU). If you have misplaced or not received this letter, contact the OU Computing Helpdesk – see Section 8. Your StudentHome page is specifically tailored to your own needs and interests and can be used to reach all the OU's student resources.

- Follow the various links provided on your StudentHome page and make sure you can locate:
  - your personal study record for S104 and any other OU current or previous modules
  - the S104 website (note that this will not be open until about 2 weeks before the module is due to start)
  - your S104 tutor's contact details (available about 1 week before the module begins)
  - your S104 tutor group forum (an electronic forum system where you can send messages to your tutor and other students in your tutor group; available about 1 week before the module begins).
- The OU provides an extensive range of study support resources under the Help Centre tab on StudentHome. Note the range of materials available, especially under the headings 'Getting started', 'During your studies', 'Computing help' and 'Assessments, assignments and examinations'.

If you need to refresh your maths skills you are strongly recommended to work through the *Maths Skills* ebook which is available from the *Study Planner* on the S104 website.

This can be accessed directly by all registered science students via www.open.ac.uk/science/main/files/science/file/ecms/web-content/maths-skills.pdf

2.2 Software to support your OU studies

The University supplies a variety of software that is free for you to load onto your computer. The software can be downloaded from the OU *Computing Guide* which is available from StudentHome. To access the OU *Computing Guide* click on 'Computing Guide' under the heading 'Services' on the left hand side of StudentHome. You will find software downloads under 'Resources'.

If you need more help with any aspect of using your computer to study, the OU's *Computing Guide* is the best place to start. If you get stuck, contact the OU Computing Helpdesk (see Section 8).

2.3 Unpack the S104 materials

You may be wondering where to start with all the material that has arrived from the OU. This section will help, so put everything else aside and read on.

You will receive just one package ('mailing' in OU jargon) of S104 materials. It is vital that you check this as soon as it arrives, so that you know what it contains and can make sure that all the items are present. When you open the mailing start by finding the *Contents Checklist,* which is usually printed on a yellow sheet of paper, and tick off each item listed as you unpack it. If anything is missing, follow the instructions on the *Contents Checklist* to notify the OU, so that replacements can be sent to you.

Some of the resources you need for the module, including the S104 *Study Planner* will only be available via the S104 website. It may be useful to print a copy of the *Study Planner* and keep it handy: there is a printable version available at the foot of the online *Study Planner*. It gives all the key dates on your 'learning journey' through the module, including the dates by which your assignments must be received (see also Section 6 of this guide). Details on how to access the S104 website are given in Section 4.3 below.

3 Support for your studies

You are not expected to study alone. Support will come from your tutor, other students in your tutor group, through tutorials or day schools, online forums and the S104 website (which you should check regularly for important news and information). If you experience difficulties that are not directly related to the module content, you may wish to contact the Study Support Team at your Regional/National Centre.

3.1 Support from your tutor

You are one of about 20 students allocated to a tutor (Associate Lecturer) for the module. He or she will support your learning throughout the module and will also mark your assignments. Your tutor will also provide online support via your tutor group forum. You can contact your tutor by email, telephone or by posting a message on your S104 tutor group forum.

We encourage you to establish contact with your tutor as soon as you know who they are by sending an email or making a telephone call. OU tutors are extremely dedicated people who want to help you with your studies, so don't hesitate to contact them for help or advice.

Do please be aware, though, that OU tutors spend a certain amount of their working time on any particular module. This time includes marking assignments, preparing and delivering tutorials or day schools, preparing for and facilitating a number of tutor group forum activities and supporting their students more generally.

Despite the prevalence of apparently 'instant' electronic communication please have realistic expectations about how quickly your tutor ought to respond to any queries that you might raise. Your tutor will provide details about this and use of the tutor group forum at the start of the module.

3.2 Tutor or regional group forum

While studying S104 you will be expected to keep in touch with your tutor and other students in your tutor or regional group by using the OU's electronic forum system. You will be allocated, with the other members of your tutor or regional group, to an electronic forum where you can ask questions, discuss the module and participate in online activities, for example posting the results of experiments. Online forums are rather like a group email system. For example, you can send messages to your group forum and these can be read by all members of your group.

The online collaborative activities in the module will also take place in your group forum. You should check your group forum at least twice a week and check the S104 news area on the S104 website regularly. Depending on the geographic location of the whole tutor group, you may have opportunities to participate in face to face tutorials or day schools with your tutor and tutors for other groups of students.

3.3 Synchronous audio conferencing

Synchronous audio conferencing (you will see this referred to as OU live) enables you to talk in real time over the internet to students and tutors from your module. It is generally used to support small group tutorials, lectures, meetings or drop-in events. Although the use of synchronous audio conferencing is not part of the formal tuition strategy for S104, it is being increasingly used by tutors or regions to offer support to individuals and groups. Further details about the use of synchronous audio conferencing can be found in the OU *Computing Guide*.

3.4 Behaviour in online discussion forums

The OU has a responsibility to maintain an educational environment where all students feel they can participate without fear of being ridiculed, abused or upset. Your responsibility is to try to communicate in a reasonable manner and to help maintain a friendly, supportive environment. The OU owns the network on which you are communicating and if a person's behaviour becomes unacceptable the University has the right to exclude that person from the network. By signing up for this module you are also signing up to the OU *Computing Code of Conduct*, one of a number of useful documents that you can find by following the Policy documents for students link on your StudentHome page.

4 Module components

4.1 Introduction and Guide

You are reading this now! It describes the module and its learning outcomes and assessments and gives useful advice on accessing online resources.

4.2 Module texts

There are eight books in this module:

Book 1 *Global Warming*

Book 2 *Earth and Space*

Book 3 *Energy and Light*

Book 4 *The Right Chemistry*

Book 5 *Life*

Book 6 *Exploring Earth's History*

Book 7 *Quarks to Quasars*

Book 8 *Life in the Universe*

The S104 website has a *Glossary* of the terms highlighted in bold type in the books.

4.3 The S104 website

The S104 website provides you with an online 'home' for everything that relates to studying S104 *Exploring science*. Follow the link to the S104 website, which opens about two weeks before module start, from your StudentHome page. From here you will be able to access electronic versions of all the printed resources (click on the Books or General resources link), assessment material (click on the Assessment link), and even advice on how to use this website, as well as a range of online resources (click on Useful web links). The Activities link will be where you go to access specific instructions for many of the activities that you will meet during your study.

As the module team's main method of communication with you will be via the News section on this website, you should visit this section regularly to check for the latest S104 news and information.

4.4 Study Planner

A *Study Planner* is provided as an online resource on the S104 website. This gives all the key dates in the study period to help you keep on track.

The online calendar on the S104 website is available in different 'views': the *Study Planner* and your personal calendar. The *Study Planner* view opens up first when you go to the S104 website and has links directly to module activities, assessment and other resources. Your personal calendar is available via StudentHome as soon as you confirm your registration on a module. You'll see it in 'Tools'. The personal calendar shows a month-by-month calendar with highlighted key events, to which you can upload any important personal deadlines affecting your study. You can display entries from your OU personal calendar on your *Study Planner* to help you remember important dates and plan your study around them. Further information about the *Study Planner* and personal calendar can be found in the OU *Computing Guide*.

You will probably find it helpful to use the online *Study Planner* throughout the whole module – you will be referred to it very early in the module (Book 1, Activity 1.1), when you are asked to prepare a detailed plan for your own study time. You may find it useful to upload your completed detailed study plan to the personal calendar so that it is available to you each time you access the S104 website.

4.5 Module activities

To help you plan your study, activities are numbered and the time we expect each activity to take is indicated in the book. Icons are printed in the margin of the book if an activity requires use of a computer to run a DVD or for online work, or is a practical activity, so that you can easily identify when you require access to a computer or when you need to gather items for a practical activity (see Section 4.5.2).

A list of all activities will be given on the S104 website with more detail of how to access some electronic resources, where required.

4.5.1 DVD-ROMs

Seven of the eight books have associated resources that are supplied on DVD-ROM. This material is also available online via the S104 website. Some of the resources are video sequences which can be viewed either on a computer or on a domestic DVD player attached to a television. However, some of the resources are interactive and must be studied on a computer, because you will need to use a keyboard or mouse to interact with them. The resources form part of the book activities that you are required to complete as you study the module.

To use the material on the DVDs or from the S104 website you must have Adobe Flash Player 9 or higher already installed on your PC. (If you do not have at least version 9 you can download the latest version free from the Adobe website www.adobe.com/products/flashplayer.)

4.5.2 Practical activities

Practical work is very important in understanding and learning about science and is an integral part of S104. A variety of activities that you can carry out at home provide opportunities to develop your practical skills and some of your work will be assessed.

You will have received a Practical Kit in the module mailing. It is important that you familiarise yourself with the items in the Kit, and check that nothing is missing. You can do this by going to the S104 website, selecting General resources and scrolling to the Practical Kit section. Here you will find a list of what should be included in your Kit. The first occasion you will need to use the Kit is for Book 2 Activity 5.1, so you should ensure that your Kit is complete as soon as possible (we suggest that you do this during study week 0 on the *Study Planner*). If any items are missing you should contact Materials despatch (see Section 8 of this guide).

In addition to the Practical Kit that you will have received with the module mailing, there are a number of everyday items that you need to provide in order to carry out the practical activities in the module. You can find a list of these items on the S104 website and you should ensure that you have these available in good time. Some practical work is also done using resources available on the S104 website, for example a 'Digital Kit' of museum quality fossil specimens.

4.6 What you need to provide

To study this module you need to provide the following items.

- A basic scientific calculator (it will normally include buttons labelled 'sin', 'cos', 'tan'). It is important that you know how to use your calculator properly (referring to the operating instructions if needed). If you need to buy a new scientific calculator, you are advised to get the cheapest one available as it will be sufficient for this module. Please note that programmable calculators are not allowed in the exam.

- A computer with a DVD drive and connection to the internet. Details of the computer specification are given online at: www3.open.ac.uk/study/atoz/pc-specification/pc_req_4.htm

- If synchronous audio conferencing (OU Live) sessions are available you will need a headset with a microphone (see Section 3.3 above).

5 Learning outcomes

All OU modules have a set of learning outcomes which are statements of what a student is expected to know, understand and be able to do at the end of the module. Learning science is not just about knowing subject-specific details but also about developing the skills necessary to use this subject knowledge. Assessment activities will give you opportunities to show how you are working towards the learning outcomes for S104. They also give your tutor a framework against which specific feedback can be given on your progress. You will be encouraged to monitor and assess your own progress as you work through the module and identify where you may need help. The learning outcomes provide a language that helps you recognise and express your own achievements.

You will see that the learning outcomes are clustered in four groups.

- Knowledge and understanding relate to the content and subject matter of the module

- Cognitive or thinking skills are associated with analysis and synthesis of the module content

- Key skills are more general and include your ability to communicate, use relevant ICT (information and communication technologies) and information literacy and mathematical skills

- Practical skills related to the subject area.

Learning outcomes for S104

Knowledge and understanding (Kn)

In the context of the topics covered in S104, you should be able to demonstrate knowledge and understanding of:

Kn1 facts, concepts, principles, theories, classification systems and language used in science including astronomy, biology, chemistry, Earth sciences, environmental science and physics

Kn2 accuracy, precision and uncertainty

Kn3 the role of science in the world around us and in everyday life.

Cognitive skills (C)

C1 describe, analyse and interpret scientific information and data presented in a variety of ways, including texts, tables, graphs, diagrams and figures, numerical and mathematical descriptions, computer-based media

C2 apply knowledge and understanding of scientific concepts to address familiar and unfamiliar problems and their contribution to informed debate.

Key skills (Ky)

Ky1 use mathematical skills appropriate to the study of science at this level

Ky2 process and present data using appropriate qualitative and quantitative techniques and methods of presentation (including graph plotting)

Ky3 communicate scientific topics clearly and concisely, using methods and scientific language appropriate to your purpose and audience

Ky4 use information technology to learn and communicate

Ky5 monitor progress and development of effective learning strategies.

Practical skills (P)

P1 make and record observations and measurements and report results.

6 Assessment

There are three types of assessment on S104.

- Six written assignments (called tutor-marked assignments or TMAs, available from the S104 website) that you send to your tutor, each relating to one or more of the module books.

- Seven interactive computer-marked assignments (iCMAs) completed online. These iCMAs form an important part of the self-assessment component of the module. These are 'interactive' as they provide feedback should your answer be incorrect and you can try again. As well as checking and reinforcing understanding and skills as you study a particular subject area these iCMAs will be a valuable resource for exam revision.

- A written exam that will draw on knowledge, understanding and skills developed across the whole module.

You will find information on how to submit the written assignments on the S104 website in the Assessment section. The dates by which you must submit your TMAs are given in the module *Study Planner*. These dates are important, so it would be wise to make a note of these now. Note also that the assignments (TMAs and iCMAs) will not all be on the S104 website at the beginning of the module; they will be made available at various points during the module.

The assessment that contributes to your overall module result is in two parts. Part 1 comprises the written TMAs 01–06, Part 2 comprises the written exam. You will sometimes see Part 1 referred to as the overall continuous assessment score (OCAS) component and Part 2 referred to as the overall examinable score (OES) component of your module score.

Your final result notification will refer to OCAS and OES and, in order to be sure of passing the module, you will need to obtain 40% of the marks available on both the OCAS component and on the OES component. You will be awarded a distinction grade if you achieve 85% in the exam.

From your StudentHome page, you can access the Assessment Calculator that helps you see how you are progressing with your assessment scores. You can also access from StudentHome full details of the Assessment Strategy for this module by clicking on Assignment scores and then on Assessment Strategy.

Note that there is no substitution for any of the S104 written assignments. Some OU modules allow students to 'substitute' an average score for missing or low scoring assignments, but this is not the case in S104. If you choose to miss a TMA, you will receive no marks for it.

In addition to the iCMAs, there will be many opportunities for self-assessment throughout the module. These may be in the form of short, in-text questions within the resources where you are encouraged to pause for thought, or longer questions where, for example, you may need to gather information, write a summary, draw a diagram or do a calculation.

The iCMAs and TMAs you complete throughout the module and the feedback tutors provide on your TMAs are designed to prepare you for the exam.

6.1 Writing in your own words

The purpose of assignments is to assess your understanding and this can only be done if it is your own work and you use your own words. For this reason, copying someone else's work without making reference to the author is regarded as cheating and is forbidden.

You may have seen in current press reports there is concern among Higher Education institutions about increasing awareness of cases of plagiarism. This primarily takes one of two forms: (i) students misusing information from the web or other reference sources, where they 'cut and paste' sections of text or diagrams from these resources directly into their assignments without acknowledging the original source; and (ii) students working too closely with one or more individuals to help solve or answer an assessed task or question, resulting in the production of a joint answer or solution (whether intentionally or not) to gain an unfair advantage over others in their assignments. This form of plagiarism is called collusion.

When you write, you should use your own words and keep your writing straightforward and to the point. Further guidance on how to reference a variety of sources of information will be provided as you progress through the module.

To help you understand and avoid plagiarism, before you begin your first TMA work through the resources on the 'Developing good academic practices' website at http://learn.open.ac.uk/site/dgap001.

You can also find further information about writing in your own words on the University's Skills for Study website at www2.open.ac.uk/students/skillsforstudy/writing-in-your-own-words.php.

6.2 Checking for plagiarism

This is done to check students are working in a fair and academically appropriate manner. The OU is currently using two types of text-comparison software to detect potential cases of plagiarism in work that is submitted for assessment. These are:

CopyCatch, which compares work submitted by one student with assignments submitted by all other students on the module (as well as previous presentations of the module where appropriate). It can also be used to compare each student's assignments with the module materials and other commonly used or provided references. The main use of CopyCatch is to check for cases of collusion.

Turnitin, which carries out the equivalent of an internet search, looking for matches between the text included in a piece of work submitted by a student with all forms of information and resources publicly available on the internet. This is also used to compare students' assignments against the module materials. The main use of Turnitin is to check for cases of direct copying, 'cut and paste' or not properly referencing various types of source materials.

When using these systems, the OU will not submit any personal details about you to either of them, although it is likely your work will have your personal identifier (PI) number on it from which you can be identified. Furthermore, your work will not be stored on any external system and so will not be accessible to anyone outside of the OU.

These reports are reviewed by the module team. This may result in guidance about academic conduct and support to avoid any further incidents, or if more serious may result in further action taking place.

Depending on the questions being asked and the format of the submitted answer, some level of matching between students' assignments and with other sources is expected. For example, you may have used information obtained from other sites or scientific papers as a direct quote to support your answer or illustrate a particular point (making sure that you have referenced this in the appropriate and expected manner). Likewise, you will probably use terms and phrases, which can be described as 'common knowledge' within your particular subject area and level of study, which do not need to be referenced, but are likely to arise in a similar format on a number of sites and other student's answers. The module team will take all such matters into account when reviewing each of the reports and deciding whether a student has plagiarised.

It is essential that you do not post any TMA or iCMA questions or answers on any websites or newsgroups on the internet (and this includes selling assignments on eBay).

For more information about plagiarism policy at the OU you should refer to your *Assessment handbook* or the student policy page on StudentHome.

6.3 TMAs

TMAs (tutor-marked assignments) will only be available online from the S104 website. You will not receive printed copies in the mailing. Check that you can locate TMA 01 (on the S104 website in the Resources section – click on Assessment) when you are next online. You will notice that the learning outcomes that are being assessed in each TMA question are listed, and in some cases expanded, to show particular things that each question is seeking.

Some TMA questions will relate to tutor group forum activities so you will need to plan in advance to participate in your tutor group forum at the correct time. Your tutor will provide feedback on your work normally within 14 days of submission. This feedback will form an important part of your exam revision.

6.3.1 TMA submission

Your TMAs should be submitted through the eTMA system unless there are some exceptional circumstances which prevent you from doing so. In these circumstances, you must negotiate with your tutor to get their agreement to submit your assignment on paper. The eTMA system allows for eTMA submission directly to the university 24 hours a day, and either gives you confirmation that your eTMA has been submitted successfully or, if there has been a problem, an error message informing you of the problem and what steps you can take to overcome it. Note that submitting an eTMA is not the same as sending a TMA to your tutor as an email or as an attachment to an email, neither of which are permitted.

There is a link to the online eTMA/EMA service on the S104 website and on-screen guidance is provided as you submit. All the information you need in order to submit your assignments is provided either here in the *Introduction and Guide* (i.e. module-specific information), on-screen as you submit, or in the *Assessment Handbook*, which you can access from the Resources area of the S104 website or from your StudentHome page.

Of particular importance is the test submission, TMA 00. This will not only enable you to familiarise yourself with the system but also allow your tutor to check that the format in which you will be saving your TMAs is compatible with their own computer software. It is your responsibility to make sure that you submit documents in a compatible format and therefore we strongly recommend that you submit TMA 00. TMAs which are submitted in an incorrect format may not be marked. Your tutor may want to advise you as to what and when to submit TMA 00, so it is preferable to wait until after the module start date to submit it.

It is essential that mathematical arguments or chemical equations or structures are set out correctly – allowance cannot be made if you word-process a mathematical argument or chemical equation but do not know how to produce proper superscripts or subscripts, such as 10^{-1} or Cl_2. If you do not have access to the necessary computer software or you do not possess the necessary ICT skills to do this within a word-processed document, then you have may need to try a different approach. You can find help with these alternative approaches on the S104 website under 'Assessment'.

You could electronically scan hand-generated diagrams, mathematical arguments or chemical equations/structures and then incorporate the resulting images into a word-processed document which you submit as an eTMA (you will not lose marks for submitting your work in this way – you are not expected to use computer drawing packages but you can do so if you wish). However, you do need to be aware that this can increase the size of files considerably. If you encounter difficulties submitting electronic files, then you should contact the OU Computing Helpdesk (details in Section 8).

6.3.2 Late submission

The *Study Planner* specifies the date (called the cut-off date) by which each of your TMAs must be received, unless you agree a late submission date with your tutor. Note that if you need to request late submission:

- You must explain your reasons to your tutor before the cut-off date.
- Your tutor must be convinced that your reasons are both appropriate and genuine.
- Your tutor will authorise an extension of more than 7 days only under exceptional circumstances.
- Your tutor is not allowed to give an extension of more than 21 days under any circumstances.
- An extension of more than 21 days can be authorised only by your Regional/National Centre.
- Permission to submit a TMA more than 7 days after the cut-off date will not normally be granted for more than a total of two TMAs on S104.
- It is not usually possible to be awarded an extension for the final TMA of the module, as this may interfere with the preparation for your exam. However, if you have serious extenuating circumstances, please contact your tutor in the first instance.

6.4 iCMAs

S104 includes seven interactive computer-marked assignments (iCMAs) for self-assessment. The iCMAs do not contribute to your overall continuous assessment score (OCAS). You will be provided with immediate computer-generated feedback on your iCMA answers, so you can use them to help inform you about your knowledge, understanding and skills. Most of the questions allow a second and third attempt at an answer, so you can learn from the feedback provided before having another go.

We suggest that you look at the questions when they are first available and revisit them at various times during your study of the relevant book, answering them in stages as you complete your study of each section, in order to check your understanding.

Instructions for accessing and using iCMAs

- The iCMAs are accessed from the S104 website and each one opens just before the related study book. You can spend as long as you wish on the questions within that time. You can access the iCMA as many times as you wish once it has been made available on the site.

- You need to be online while you are working on an iCMA, but you can take breaks whenever you like. If you break off from the assignment part way through, when you resume the iCMA you will be taken back to exactly the point where you stopped working and your answers to the questions you have already completed will have been retained, such that you can carry on where you left off.

- The answers to the questions are short and can be entered onto your computer in a straightforward way. However, you will need to do some working for most of the questions, so you should have your calculator, a pen and paper with you all the time you are working on the iCMAs. You may also like to have the S104 material to hand, for ease of reference. Working online tends to encourage people to guess the answers to questions. We would urge you to resist this temptation; time spent methodically working out each answer is time well spent.

- Once you have submitted an attempt you will be able to repeat it at a future date, e.g. as part of your revision for the exam.

- If you would like the text of an iCMA to be displayed in larger font or with a different background colour etc., select Display options in the top right-hand corner of the screen (see Figure 1).

- While working through the questions, select Check to check your answer, Try again to attempt a question for a second or third time and Next to move on to the next question. You are advised *not* to use the 'Back' function on your web browser.

- If you would like further guidance on how to input your answers to the questions, select Help in the top right-hand corner of the screen (see Figure 1).

- The questions will be presented to you in sequence. Most questions allow up to three attempts (the number of attempts is stated at the top of each question). Feedback is provided after each incorrect answer. After you have answered a question correctly, or made three unsuccessful attempts at answering it, you will be told the correct answer and then you will have to move on to the next question.

- Although the questions are presented to you in sequence, it is possible to attempt most of them in any order. To move to a different question, select the relevant question number on the left-hand side of the screen. There are some questions which must be attempted in a particular order; in these cases a question will be 'greyed out' and you will not be able to read it until you have completed the previous question.

- You will not be given exactly the same questions as other students or your tutor, so if you want to query a point with your tutor, remember to make a note of the question you were asked and any responses you made. Please refer to the guide to assessment area of the module website for further information.

Figure 1 An example of an iCMA question.

6.5 Final examination

At the end of the module there will be a 3-hour examination. To pass the module you must achieve 40% overall on your TMAs and 40% in the exam. The score you achieve in the exam will determine the score recorded as the module result. You will take the exam at the exam centre nearest to where you live. Further information about examination arrangements will be made available on your StudentHome page.

The exam paper will have a number of sections; further details are provided on the S104 website. A *Specimen Exam Paper*, which is in the same form as the actual exam is available on the S104 website. You can establish the level of detail required in your answers by referring to the specimen answers accompanying the *Specimen Exam Paper*.

The OU has a wide range of support material on revising and preparing for an examination which is accessible via StudentHome. The iCMAs and TMAs you complete throughout the module and the feedback tutors provide on your TMAs are designed to prepare you for the exam.

6.6 Special circumstances

If circumstances arise that prevent you submitting a TMA at all or result in you having to submit an assignment which is incomplete or otherwise well below your usual standard, then you should consider reporting the circumstances to the University so that the S104 Examination and Assessment Board can bear them in mind as it determines your module result.

Details concerning the submission of special circumstances information are given in the *Assessment Handbook* (available via your StudentHome page).

We hope you will not have to refer back to this section of the *Introduction and Guide* – but remember that it exists in case you need to use it.

7 Safety when conducting practical work

When carrying out any practical activity you should always take care to observe the safety precautions highlighted in the module book. Very often these precautions will seem quite obvious and just a matter of using common sense. However that does not mean that you should ignore the safety instructions. The OU has a duty to give advice on health and safety to students carrying out any activities that are described in the module. Similarly, you have a duty to follow the instructions and to carry out the practical activity having regard for your own safety and that of other people around you. Whenever you do practical activities you should think about the hazards involved, and how any risks can be minimised.

The following safety precautions apply to all practical activities. When there are other precautions specific to an activity, these will be printed in the module book. First aid advice is also provided below.

7.1 Important safety precautions

Take note of the following safety precautions, which apply to all practical activities.

- Keep children and animals away while you are working.
- Clear your working area of clutter. Put all food away. Ensure there is nothing to trip over underfoot.
- Always wash your hands thoroughly after a practical activity.
- Any household items used should be thoroughly cleaned before returning them to domestic use.

7.2 Accident and first aid advice

You should have the following accident and first aid advice easily to hand when conducting practical work.

Fire

In the event of a fire, switch off and disconnect any electrical equipment, cover the fire with a wet towel or dry earth or sand. Shut all windows, doors and vents. Evacuate everyone in the house/building, close the door behind you and telephone the fire service.

Clothing on fire

Get the person affected to lie down, and smother the flames by rolling the person in a carpet, blanket, overcoat, etc. Obtain medical help immediately.

Electric shock

Switch off the source of the current and remove the person affected with an insulated lever. Make them lie down and keep them warm. Obtain medical help quickly if they lose consciousness or have difficulty in breathing. If you are trained to do so begin artificial respiration immediately if breathing ceases.

First aid advice

In the unlikely event of a mishap that results in a cut, burn or shock please refer to the standard first aid information below.

Cuts

If you cut yourself badly, try to reduce the blood flow by putting a pad of clean tissue or cloth over the wound and pressing gently, but firmly, raising the limb, until the flow stops. Obtain medical aid if necessary.

Burns and scalds

The notes below act as a simple guide for the First Aid treatment of burns and scalds.

    (a) DO NOT prick any blisters;

    (b) DO NOT apply ointments or oil-based dressings.

    (c) DO NOT remove anything sticking to the burn.

If you have any concerns, seek medical aid immediately.

The First Aid treatment of burns and scalds is designed to achieve three basic aims:

    1   To get rid of residual heat

The affected area should be immersed in or held under gently running cold water for at least 10 minutes or longer if cessation causes the pain to return. This treatment will relieve the pain and help to reduce the severity of the final injury.

    2   To prevent infection

Avoid handling a burn unnecessarily, especially if the skin is broken. Remove any clothing not sticking to the burn and cover the area with a clean, dry dressing. Restrict the movement of badly burned areas.

    3   To treat for shock

> **_Shock_**
>
> Patients in shock should be kept warm and as comfortable as possible in a reclining position, with legs raised. Give nothing by mouth and obtain medical aid.

8 Problems and who to contact

The best way to contact the OU for virtually all sources of help is via StudentHome where there is a comprehensive Help Centre – select this option to find links to a number of related questions, answers and links to other OU websites. There is also a 'Contact' link – follow this option to open up a page with a number of links and select the heading that best reflects what your query is about. Alternatively, you can use the Student Registration and Enquiry Service number at any time on +44 (0)845 300 6090.

If you have misplaced your OU Computer Username (OUCU) and password and cannot access your OU StudentHome page contact the OU Computing Helpdesk on +44 (0)1908 653972.

In all contact with the University, you should give your name and PI number and module code so that we have a record of your request and can contact you. In any emails you send by selecting 'Contact' on StudentHome your name and PI will be completed automatically.
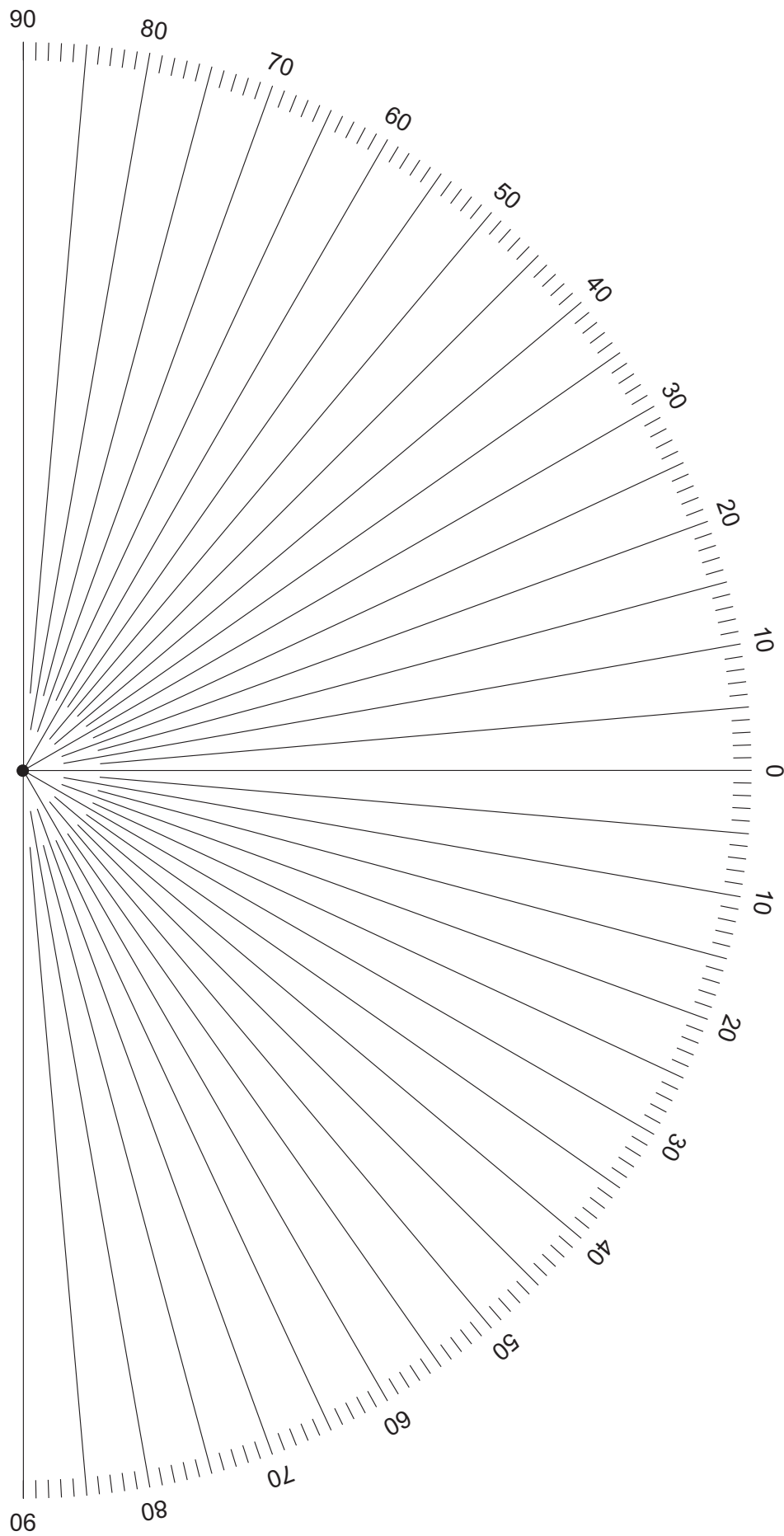
Figure 2 Paper protractor for use with Activity 11.1 in Book 3.